

The U4HNⁱ Columbia Area Food Assessment analyzed the community's food environment in terms of:

- Relationships among accessibility, availability, and affordability of healthy foods
- Transportation used by consumers to reach a food store
- Places people buy and grow food
- Consumer decisions about food and food store choices
- Disparities in diet-related health conditions and food insecurity

METHODS

- Consumer surveys were conducted throughout Columbia and online. 774 surveys were completed, of which 145 were paper surveys and 629 were online. Efforts were made to ensure a representative sample of the population across all six Columbia wards. (Fall 2011)
- Community Issues Management (CIM), developed by CARES, was used to store and integrate information. The Geographic Information Systems (GIS) mapping tool was used to create maps using multiple data layers. (Fall 2011-Spring 2012)
- The USDA Thrifty Food Basket Plan (TFP) was used to determine the availability and prices of 87 food items at 24 stores where consumers shopped regularly for food. This included 15 supermarkets, 3 partial markets, 3 specialty stores, and 3 convenience stores. (Winter 2012)

RESULTS

Availability of Food Stores

	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6
Supermarkets	2	2	4	2	1	3
Partial Markets	5	3	1	1	2	1
Specialty Stores	4	4	3	1	1	2
Convenience Stores	9	9	10	3	3	5

- Large portions of several wards are barren of any type of store. Household food choices may be limited because of the lack of close access to food and lack of access to transportation.

Geographic and Income Differences (Food Store Use, Transportation, Consumer Decisions)

Supermarkets	<ul style="list-style-type: none"> • Households generally shopped for food at supermarkets because of low prices • Only 64% of Ward 2 respondents used supermarkets. 15.6% traveled > 3 miles to a supermarket • Over 4.7% of Ward 2 households and 3.1% of Ward 1 households walked to food stores • 12.5% of Ward 1 households and 5.4% of Ward 3 households took the bus to food stores • Households earning < \$5000/year had the highest percentage of households that walked to supermarkets (9.1%), took the bus (24.2%), and received a free ride (15.2%).
Partial Markets	<ul style="list-style-type: none"> • Used by 33% of Wards 1 and 6 households; 9.2% of Ward 6 shopped there for low prices • Over 48% of Ward 1 and 33% of Ward 6 traveled < 1 mile to a partial market • 23.5% of Ward 1 households walked to partial markets • 8.8% of Ward 1 households and 9.1% of Ward 5 households used the bus to get to partial markets • Highest use of partial markets was among households earning < \$15,000 annually (44%) • 18% of households earning < \$5000/year walked to partial markets. 9.1% took the bus.
Specialty Store	<ul style="list-style-type: none"> • Ward 4 households had highest use (44.6%), although 78.5% lived > 1 mile from a specialty store • 59% of Ward 6 households lived < 1 mile from a specialty store, but only 26% shopped there. • 16% of Ward 1 households walked to partial markets; 18.4% biked
Convenience Stores	<ul style="list-style-type: none"> • 8% of Ward 1 and Ward 5 households regularly purchased food at convenience stores • In Ward 1, 87% of households lived < 0.5 miles from a convenience store • 11% of Ward 1 households shopped at convenience stores because it was the closest food source • 50% of Ward 1 and 19% of Ward 3 walked to convenience stores

Accessibility

- For those without access to a personal vehicle, public transportation is likely to serve as the main option to reach a food store > 1 mile from home.
- Bus routes service the majority of the low-income regions of the city. Most residential areas within close proximity to the boundary of the city limits are not serviced.
- Low-income households with limited bus service in Wards 2-6 may have food access obstacles.

Availability and Affordability of Food Items

- Supermarkets stocked most TFP items. Partial markets and specialty stores sold around half of the TFP items. Convenience stores that were surveyed sold around 30% of TFP food items.
- Supermarkets were the most affordable (\$2.06/item), followed by partial markets (\$2.85), convenience stores (\$3.43), and specialty stores (\$6.58).
- Convenience stores and partial markets had no fresh fruits and vegetables on the day surveyed.

Use of Alternative Food Sources

- Almost 14% of those surveyed used food pantries, with the most in Ward 1 (31.9%)
- Nearly 72% of survey respondents had been to a farmers' market (FM) in the past 12 months
- Around 46% of households surveyed had a personal garden or community garden plot
- Nearly 13% of survey respondents participated in a Community Supported Agriculture (CSA) program

Health and Food Security

Food security is access by all people at all times to enough food for a healthy lifestyle. Dietary changes resulting from food insecurity may increase risks for diabetes, high blood pressure, and high cholesterol.

- 28% of those surveyed were food insecure; 9% at the very lowest level (14.3% in Wards 2 and 6)
- 8% of respondents had diabetes. 5.6% reported a household member was diabetic. (most in Ward 1: 11%)
- 21% of respondents reported having high cholesterol (highest in Ward 3: 28.1%)
- 21% of respondents reported high blood pressure (highest in Ward 3: 31.3%)
- 6.2% of non-food pantry users had diabetes, while 21.8% of food pantry users had diabetes.
- 23.4% of non-gardeners had high blood pressure, while 16.8% of gardeners had high blood pressure.
- FM users consumed 2.51 vegetable servings/day compared to 1.97 servings for non-FM users.

RECOMMENDATIONS

Approaches, such as bringing supermarkets to food deserts, are not enough to change purchasing and eating behaviors.ⁱⁱ Access, affordability, and education must receive equal attention.

- Locally, Access to Healthy Foods allowed qualified low-income individuals and families to double the value of each dollar, up to \$25, when shopping at the Columbia FM, improving healthy food access.
- Continuous efforts to obtain the perspectives of producers, distributors, and retailers is important to gain further understanding of the community's food system. Questions addressing economic development, social justice, and food safety should be included in subsequent food systems work in Columbia.

ⁱ Food Asset Mapping Team includes representatives from the PedNet Coalition, University of Missouri (MU) Extension Healthy Lifestyle Initiative-Boone County, the MU Center for Applied Research and Environmental Systems (CARES), and the Columbia/Boone County Department of Public Health and Human Services .

ⁱⁱ Lee, H. (2012). The Role of Local Food Availability in Explaining Obesity Risk Among Young School-Aged Children. *Social Science & Medicine*, 74, 8, 1193 - 1203.

Drewnowski, A., Aggarwal, A., and Vernez Moudon, A. (2010). *The Supermarket Gap: How to Ensure Equitable Access to Affordable, Healthy Foods*. Retrieved from <http://depts.washington.edu/uwcpn/reports/cphnbf051910.pdf>